

Applicant: Crye, et al.  
Application No.: 10/061,950  
In response to the Office Action dated March 11, 2004

### Claim Listing

1. (currently amended) A structural member comprising:

a top member;

a bottom member extending generally parallel to and beneath the top member; and

a plurality of wing members positioned between the top member and the bottom member[.];

wherein each wing member has a center segment which is hinged to the bottom member to pivot about a first axis and hinged to the top member to pivot about a second axis which is parallel to the first axis[.]; and

wherein at least one wing extends from each wing member center segment along a wing axis which extends between and is perpendicular to both the first axis and the second axis, the at least one wing being [[and is] biased to move about said wing axis to project out of a first plane defined between the first axis and the second axis, such that the structural member is transformable from a first collapsed condition to an expanded condition in which the wings project out of the first planes to thereby support the top member above the bottom member and to resist the return of the structural member to the collapsed condition.

2. (original) The structural member of claim 1 wherein the top member and the bottom member are planar sheets.

3. (original) The structural member of claim 1 wherein all the first axes and the second axes of the plurality of wing members are parallel.

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4. (currently amended) ~~The structural member of claim 1~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is hinged to the bottom  
member to pivot about a first axis and hinged to the top member to pivot about a  
second axis which is parallel to the first axis, and wherein at least one wing  
extends from each wing member center segment and is biased to project out of a  
first plane defined between the first axis and the second axis, such that the  
structural member is transformable from a first collapsed condition to an  
expanded condition in which the wings project out of the first planes to thereby  
support the top member above the bottom member and to resist the return of the  
structural member to the collapsed condition, wherein the wing members are  
positioned to approximate a hexagonal cell pattern extending between the top  
member and the bottom member.

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5. (currently amended) ~~The structural member of claim 1~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is hinged to the bottom  
member to pivot about a first axis and hinged to the top member to pivot about a  
second axis which is parallel to the first axis, and wherein at least one wing  
extends from each wing member center segment and is biased to project out of a  
first plane defined between the first axis and the second axis, such that the  
structural member is transformable from a first collapsed condition to an  
expanded condition in which the wings project out of the first planes to thereby  
support the top member above the bottom member and to resist the return of the  
structural member to the collapsed condition, wherein each wing is curved about  
an axis which is perpendicular to the first and second axis.

6. (original) The structural member of claim 1 further comprising a fastener which connects the top member to the bottom member in the first collapsed condition.

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7. (original) ~~The structural member of claim 6~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is hinged to the bottom  
member to pivot about a first axis and hinged to the top member to pivot about a  
second axis which is parallel to the first axis, and wherein at least one wing  
extends from each wing member center segment and is biased to project out of a  
first plane defined between the first axis and the second axis, such that the  
structural member is transformable from a first collapsed condition to an  
expanded condition in which the wings project out of the first planes to thereby  
support the top member above the bottom member and to resist the return of the  
structural member to the collapsed condition, further comprising a fastener which  
connects the top member to the bottom member in the first collapsed condition,  
wherein the fastener comprises at least one segment of adhesive tape, and wherein  
a cord is disposed beneath the adhesive tape with at least one protruding free end,  
such that pulling the cord severs the tape and permits the top member to be  
displaced from the bottom member.

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8. (original) ~~The structural member of claim 1 further comprising~~ A structural member comprising:
- a top member;
  - a bottom member extending generally parallel to and beneath the top member;
  - a plurality of wing members positioned between the top member and the bottom member,
    - wherein each wing member has a center segment which is hinged to the bottom member to pivot about a first axis and hinged to the top member to pivot about a second axis which is parallel to the first axis, and wherein at least one wing extends from each wing member center segment and is biased to project out of a first plane defined between the first axis and the second axis, such that the structural member is transformable from a first collapsed condition to an expanded condition in which the wings project out of the first planes to thereby support the top member above the bottom member and to resist the return of the structural member to the collapsed condition; and
- at least one edge finish tab extending from a selected member of the top member and the bottom member, the at least one edge finish tab comprising:
- an end wall which is hinged to the selected member; and
  - a fastening flap which is hinged to the end wall, wherein in the first collapsed condition the at least one edge finish tab is folded back to lie adjacent to the outside surface of the selected member, and wherein in the erected configuration, the at least one edge finish tab is rotated to bring the fastening flap into engagement with the top member or the bottom member which is opposite the selected member, and affixed thereto.

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9. (original) The structural member of claim 8 further comprising at least one fastener mounted to the fastening flap of the at least one edge finish tab, the at least one fastener being positioned to engage a like fastener on another structural member positioned alongside.

10. (original) The structural member of claim 1 wherein the at least one wing member is a part of a strip having three sections, a bottom attachment section which is fixed to the bottom member, a wing section which is hinged to the bottom attachment section along a first hinge axis, and a top attachment section which is hinged to the wing section along a second hinge axis and fixed to an underside of the top member, wherein the first hinge axis is parallel to the second hinge axis, and wherein the wing section has a plurality of wings.

11. (original) The structural member of claim 1 wherein in the first collapsed condition the structural member is rolled into a roll.

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12. (currently amended) ~~The structural member of claim 1 further comprising~~ A structural member comprising:

a top member;

a bottom member extending generally parallel to and beneath the top member; and

a plurality of wing members positioned between the top member and the bottom member,

wherein each wing member has a center segment which is hinged to the bottom

member to pivot about a first axis and hinged to the top member to pivot about a

second axis which is parallel to the first axis, and wherein at least one wing

extends from each wing member center segment and is biased to project out of a

first plane defined between the first axis and the second axis, such that the

structural member is transformable from a first collapsed condition to an

expanded condition in which the wings project out of the first planes to thereby

support the top member above the bottom member and to resist the return of the

structural member to the collapsed condition a base section fixed to the bottom

member having a projecting resilient tab corresponding to each wing, the tabs

being biased in an upwardly projecting position, a slot being defined adjacent each

tab, such that in the first collapsed condition, each tab is overlain by a wing, and

in the expanded configuration each wing passes over a tab to be engaged within

one of the slots.

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13. (currently amended) A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
at least one strip having three sections, a bottom attachment section which is fixed to the bottom member, a wing section which is hinged to the bottom attachment section along a first hinge axis, and a top attachment section which is hinged to the wing section along a second hinge axis and fixed to the underside of the top member, wherein the first hinge axis is parallel to the second hinge axis, and wherein the wing section has a plurality of wings, each wing extending from a center segment along a wing axis which extends between and is perpendicular to both the first axis and the second axis, each wing [[and]] being biased to move about said wing axis to project out of a plane defined between the first axis and the second axis, such that the structural member is transformable from a first collapsed condition to an expanded condition in which the wings project out of the first plane to thereby support the top member above the bottom member and to resist the return of the structural member to the collapsed condition.

14. (original) The structural member of claim 13 wherein the top member and the bottom member are planar sheets.

15. (original) The structural member of claim 13 wherein all the first axes and the second axes of the plurality of wing members are parallel.



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16. (currently amended) ~~The structural member of claim 13~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
at least one strip having three sections, a bottom attachment section which is fixed to the  
bottom member, a wing section which is hinged to the bottom attachment section  
along a first hinge axis, and a top attachment section which is hinged to the wing  
section along a second hinge axis and fixed to the underside of the top member,  
wherein the first hinge axis is parallel to the second hinge axis, and wherein the  
wing section has a plurality of wings, each wing extending from a center segment  
and being biased to project out of a plane defined between the first axis and the  
second axis, such that the structural member is transformable from a first  
collapsed condition to an expanded condition in which the wings project out of  
the first plane to thereby support the top member above the bottom member and to  
resist the return of the structural member to the collapsed condition, wherein the  
wing members are positioned to approximate a hexagonal cell pattern extending  
between the top member and the bottom member.

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17. (original) ~~The structural member of claim 13~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member; and  
at least one strip having three sections, a bottom attachment section which is fixed to the  
bottom member, a wing section which is hinged to the bottom attachment section  
along a first hinge axis, and a top attachment section which is hinged to the wing  
section along a second hinge axis and fixed to the underside of the top member,  
wherein the first hinge axis is parallel to the second hinge axis, and wherein the  
wing section has a plurality of wings, each wing extending from a center segment  
and being biased to project out of a plane defined between the first axis and the  
second axis, such that the structural member is transformable from a first  
collapsed condition to an expanded condition in which the wings project out of  
the first plane to thereby support the top member above the bottom member and to  
resist the return of the structural member to the collapsed condition, wherein each  
wing is curved about an axis which is perpendicular to the first and second axes.

18. (original) The structural member of claim 13 further comprising a fastener which connects the top member to the bottom member in the first collapsed condition.

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19. (original) ~~The structural member of claim 18~~ A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member;  
at least one strip having three sections, a bottom attachment section which is fixed to the  
bottom member, a wing section which is hinged to the bottom attachment section  
along a first hinge axis, and a top attachment section which is hinged to the wing  
section along a second hinge axis and fixed to the underside of the top member,  
wherein the first hinge axis is parallel to the second hinge axis, and wherein the  
wing section has a plurality of wings, each wing extending from a center segment  
and being biased to project out of a plane defined between the first axis and the  
second axis, such that the structural member is transformable from a first  
collapsed condition to an expanded condition in which the wings project out of  
the first plane to thereby support the top member above the bottom member and to  
resist the return of the structural member to the collapsed condition; and  
a fastener which connects the top member to the bottom member in the first collapsed  
condition, wherein the fastener comprises at least one segment of adhesive tape,  
and wherein a cord is disposed beneath the adhesive tape with at least one  
protruding free end, such that pulling the cord severs the tape and permits the top  
member to be displaced from the bottom member.

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20. (original) ~~The structural member of claim 13~~ further comprising A structural member comprising:  
a top member;  
a bottom member extending generally parallel to and beneath the top member;  
at least one strip having three sections, a bottom attachment section which is fixed to the bottom member, a wing section which is hinged to the bottom attachment section along a first hinge axis, and a top attachment section which is hinged to the wing section along a second hinge axis and fixed to the underside of the top member, wherein the first hinge axis is parallel to the second hinge axis, and wherein the wing section has a plurality of wings, each wing extending from a center segment and being biased to project out of a plane defined between the first axis and the second axis, such that the structural member is transformable from a first collapsed condition to an expanded condition in which the wings project out of the first plane to thereby support the top member above the bottom member and to resist the return of the structural member to the collapsed condition; and  
at least one edge finish tab extending from a selected member of the top member and the bottom member, the at least one edge finish tab comprising:  
an end wall which is hinged to the selected member; and  
a fastening flap which is hinged to the end wall, wherein in the first collapsed condition the at least one edge finish tab is folded back to lie adjacent to the outside surface of the selected member, and wherein in the erected configuration, the at least one edge finish tab is rotated to bring the fastening flap into engagement with the top member or the bottom member which is opposite the selected member, and affixed thereto.

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21. (currently amended) The structural member of claim [[22]] 20 further comprising at least one fastener mounted to the fastening flap of the at least one edge finish tab, the at least one fastener being positioned to engage a like fastener on another structural member positioned alongside.

22. (original) The structural member of claim 13 wherein in the first collapsed condition the structural member is rolled into a roll.

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23. (currently amended) A structural member comprising:  
a planar top member;  
a planar bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is connected to the  
bottom member to pivot about a first axis and connected to the top member to  
pivot about a second axis which is parallel to the first axis, and wherein the first  
axis and second axis of each center segment defines a first plane, and wherein at  
least one wing extends from each wing member center segment about a wing axis  
which extends between and is perpendicular to both the first axis and the second  
axis, and is biased to move about said wing axis along a front-to-back axis to  
project out of the first plane, such that the structural member is transformable  
from a collapsed condition in which the at least one wing extends generally  
parallel to the top member and the bottom member, and an expanded condition in  
which each at least one wing projects out of the first planes to thereby support the  
top member above the bottom member and to resist the return of the structural  
member to the collapsed condition, wherein in the expanded condition the top  
member is shifted in the front to back axis from its position with respect to the  
bottom member in the collapsed condition.

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24. (currently amended) ~~The structural member of claim 23~~ A structural member comprising:  
a planar top member;  
a planar bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is connected to the  
bottom member to pivot about a first axis and connected to the top member to  
pivot about a second axis which is parallel to the first axis, and wherein the first  
axis and second axis of each center segment defines a first plane, and wherein at  
least one wing extends from each wing member center segment and is biased  
along a front to back axis to project out of the first plane, such that the structural  
member is transformable from a collapsed condition in which the at least one  
wing extends generally parallel to the top member and the bottom member, and an  
expanded condition in which each at least one wing projects out of the first planes  
to thereby support the top member above the bottom member and to resist the  
return of the structural member to the collapsed condition, wherein in the  
expanded condition the top member is shifted in the front to back axis from its  
position with respect to the bottom member in the collapsed condition, wherein  
the wing members are positioned to approximate a hexagonal cell pattern  
extending between the top member and the bottom member.

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25. (original) ~~The structural member of claim 23~~ A structural member comprising:  
a planar top member;  
a planar bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is connected to the  
bottom member to pivot about a first axis and connected to the top member to  
pivot about a second axis which is parallel to the first axis, and wherein the first  
axis and second axis of each center segment defines a first plane, and wherein at  
least one wing extends from each wing member center segment and is biased  
along a front to back axis to project out of the first plane, such that the structural  
member is transformable from a collapsed condition in which the at least one  
wing extends generally parallel to the top member and the bottom member, and an  
expanded condition in which each at least one wing projects out of the first planes  
to thereby support the top member above the bottom member and to resist the  
return of the structural member to the collapsed condition, wherein in the  
expanded condition the top member is shifted in the front to back axis from its  
position with respect to the bottom member in the collapsed condition, wherein  
each wing is curved about an axis which is perpendicular to the first and second  
axis.

26. (original) The structural member of claim 23 further comprising a fastener which connects the top member to the bottom member in the first collapsed condition.



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27. (original) ~~The structural member of claim 26~~ A structural member comprising:  
a planar top member;  
a planar bottom member extending generally parallel to and beneath the top member; and  
a plurality of wing members positioned between the top member and the bottom member,  
wherein each wing member has a center segment which is connected to the  
bottom member to pivot about a first axis and connected to the top member to  
pivot about a second axis which is parallel to the first axis, and wherein the first  
axis and second axis of each center segment defines a first plane, and wherein at  
least one wing extends from each wing member center segment and is biased  
along a front to back axis to project out of the first plane, such that the structural  
member is transformable from a collapsed condition in which the at least one  
wing extends generally parallel to the top member and the bottom member, and an  
expanded condition in which each at least one wing projects out of the first planes  
to thereby support the top member above the bottom member and to resist the  
return of the structural member to the collapsed condition, wherein in the  
expanded condition the top member is shifted in the front to back axis from its  
position with respect to the bottom member in the collapsed condition, and  
a fastener which connects the top member to the bottom member in the first collapsed  
condition, wherein the fastener comprises at least one segment of adhesive tape,  
and wherein a cord is disposed beneath the adhesive tape with at least one  
protruding free end, such that pulling the cord severs the tape and permits the top  
member to be displaced from the bottom member.

28. (original) The structural member of claim 23 wherein in the first collapsed  
condition the structural member is rolled into a roll.

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29. (original) ~~The structural member of claim 23 further comprising~~ A structural member comprising:

a planar top member;

a planar bottom member extending generally parallel to and beneath the top member;

a plurality of wing members positioned between the top member and the bottom member,

wherein each wing member has a center segment which is connected to the bottom member to pivot about a first axis and connected to the top member to pivot about a second axis which is parallel to the first axis, and wherein the first axis and second axis of each center segment defines a first plane, and wherein at least one wing extends from each wing member center segment and is biased along a front to back axis to project out of the first plane, such that the structural member is transformable from a collapsed condition in which the at least one wing extends generally parallel to the top member and the bottom member, and an expanded condition in which each at least one wing projects out of the first planes to thereby support the top member above the bottom member and to resist the return of the structural member to the collapsed condition, wherein in the expanded condition the top member is shifted in the front to back axis from its position with respect to the bottom member in the collapsed condition; and

a base section fixed to the bottom member having a projecting resilient tab corresponding to each wing, the tabs being biased in an upwardly projecting position, a slot being defined adjacent each tab, such that in the first collapsed condition, each tab is overlain by a wing, and in the expanded configuration each wing passes over a tab to be engaged within one of the slots.

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30. (original) A structural member comprising:
- a top member;
  - a bottom member extending beneath the top member;
  - an array of a plurality of wing members, each wing member comprising:
    - a center segment pivotably connected about a first axis to the bottom member, and pivotably connected about a second axis to the top member, a first plane being defined by the first axis and the second axis;
    - a first wing extending sidewardly of the center segment on a first side, and biased to project from the center segment out of the first plane; and
    - a second wing extending sidewardly of the center segment on a second side spaced from the first side, and biased to project from the center segment out of the first plane, wherein in a first collapsed configuration the top member is spaced a first distance from the bottom member, and in a second expanded configuration the top member is spaced a second, greater, distance from the bottom member, and the first wings and the second wings are biased out of the first planes.

31. (original) The structural member of claim 30 wherein each wing is curved about an axis which is perpendicular to the first and second axis.